

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* WILLIAM T. BALL

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Appeal 2007-0769  
Application 10/732,726<sup>1</sup>  
Technology Center 3700

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Decided: October 17, 2007

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Before WILLIAM F. PATE, III, TERRY J. OWENS, and DAVID B. WALKER,  
*Administrative Patent Judges.*

WALKER, *Administrative Patent Judge.*

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<sup>1</sup> This application is a continuation-in-part of U.S. Application Serial No. 09/954,420 filed September 17, 2001 and a continuation-in-part of U.S. Application Serial No. 10/229,533 filed August 28, 2002, which was a continuation of U.S. Application Serial No. 09/953,724 filed June 13, 2000 (now abandoned). The real party in interest is WCM Industries, Inc. of Colorado Springs, Colorado.

## DECISION ON APPEAL

### STATEMENT OF THE CASE

Appellant seeks our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1, 5, 6, and 10. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part and remand.

### THE INVENTION

Appellant claims a system and method for easy installation of a waste water drain assembly and overflow outlet for a bathtub that can be accomplished by a single individual and easily field tested (Specification 2:16-29). Claims 1 and 10, reproduced below, are representative of the subject matter on appeal.

1. A method for conducting a fluid leakage test on a fluid system comprising a bathtub which has a bottom and adjacent side and end walls, and an overflow port in an end wall, with the bottom having a waste water port, and with the overflow port and the waste water port being in communication with a primary drain system, comprising:

sealing a thin diaphragm over the overflow port and the waste water port,

charging the primary drain system with fluid to conduct the leakage test,

purgings the primary drain system from fluid,

opening the diaphragms to thereafter permit the flow of fluid through the overflow port and the waste water port;

wherein the diaphragms are opened by physically cutting them open to permit fluid flow.

10. A method for conducting a fluid leakage test on a fluid system comprising a bathtub which has a bottom and adjacent side and end wall, and an overflow port in an end wall, and with the overflow port being in communication with a primary drain system steps comprising:

providing a one-piece overflow fitting have an overflow pipe with an inverted L-shape having an elbow portion defining an upper end portion and a lower end portion, the upper end portion having an outer end defining an inlet being adapted to fit through the bathtub overflow port;

providing threads on an outer surface of the upper end portion and surrounding the inlet and normally extending through the bathtub overflow port;

providing a lip extending radially outwardly from an outer surface of the overflow pipe between the elbow portion and the upper end portion and being spaced from the inlet to engage an outer surface of the bathtub end wall around the bathtub overflow port;

sealing a thin diaphragm to the outer end of the upper end portion to close the inlet to fluid flow;

opening the diaphragm to permit the flow of fluid through the overflow port;

threading a nut element compatible with the threads wherein the nut element has a threaded portion for threadably mounting the nut to the upper end portion to clamp the overflow fitting to the end of the bathtub between the lip and the nut element, and at least one lug extending radially from the nut; and

detachably engaging a cap to the lug to cover the nut.

### THE REJECTIONS

The Examiner relies upon the following as evidence in support of the rejections:

Ball	5,890,241	Apr. 6, 1999
Francisco	6,088,843	Jul. 18, 2000
Fritz	6,192,531 B1	Feb. 27, 2001
Lewis	US 2002/0032926 A1	Mar. 21, 2002
Oropallo	US 6,618,875 B1	Sep. 16, 2003 (filed Mar. 28, 2002)

The following rejections<sup>2</sup> are before us for review.

1. Claim 1 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Ball in view of Fritz.
2. Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Ball in view of Fritz and further in view of Francisco.
3. Claim 10 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Lewis, Fritz, and Oropallo.

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<sup>2</sup> The Examiner withdrew a rejection of Claim 10 under 35 U.S.C. § 112, first paragraph, in light of Appellant's arguments at Br. 7.

## ISSUE

The issue before us is whether Appellant has shown that the Examiner erred in rejecting (1) claim 1 as unpatentable over Ball in view of Fritz; (2) claims 5 and 6 as unpatentable over Ball in view of Fritz and further in view of Francisco; and (3) claim 10 as unpatentable over Lewis, Fritz, and Oropallo. The dispositive issue is whether it would have been obvious to one of skill in the art at the time of the invention to seal a thin diaphragm over the overflow port and the waste water port of claim 1 and the outer end of the upper end portion of the one-piece overflow fitting of claim 10.

Rather than repeat the arguments of Appellant and the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellant have been considered in this decision. Arguments which Appellant could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).

## FINDINGS OF FACT

We find the following enumerated findings to be supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427, 7 USPQ2d 1152, 1156 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Ball teaches a conventional bathtub with a base which rests on the floor, side walls and an end wall that extend upwardly from the base, and a

- bottom in spaced relation to the floor. A conventional drain port is located in the bottom and a conventional overflow port is located in the end wall. A vertical drain pipe and an overflow drain pipe are connected to a downward drain pipe via a horizontal pipe (Ball, col. 2, ll. 13-23).
2. A diaphragm comprised of flexible rubber or the like is imposed over the overflow port (Ball, col. 2, ll. 37-40). After leak testing the system, water is purged from the system and the plumber can use a knife or other sharp object to make cuts in the diaphragm without disassembling any of the structure. Ball teaches that the diaphragm eliminates any need to remove any sealing component from the overflow port after testing and facilitates the testing procedure (Ball, col. 2, l. 65 – col. 3, l. 13).
  3. Ball teaches that the drain port is plugged in any conventional manner in a conventional testing procedure (Ball, col. 2, ll. 59-60). It does not explicitly teach sealing a thin diaphragm over the waste water port to permit a leak test and then opening the diaphragm to thereafter permit the flow of fluid through the waste water port.
  4. The combined teachings of Ball to (1) use a flexible rubber diaphragm to seal the overflow port prior to perform a leak test and to use a knife or other sharp object to cut the diaphragm to permit fluid flow when the test is complete; and (2) plug the drain port in “any conventional manner in a conventional testing procedure” would have at least suggested to one of skill in the art at the time the invention was made to modify Ball to use a

- thin diaphragm to seal the drain port for leak testing in a similar manner to that disclosed for the overflow port.
5. Fritz discloses a tub waste overflow assembly with a mold in place test plug (Fritz, col. 1, ll. 11-13). The overflow assembly includes a removable test plug, preferably unitarily molded together with a retaining body. The plug thickness is preferably adequate to resist rupture when exposed to the hydraulic pressure of leak testing, but susceptible to being removed following such testing (Fritz, col. 4, ll. 30-41). Fritz also teaches that, “in a particularly preferred embodiment of the invention, a relatively thin, continuous test plug 15 is either molded in place or otherwise provided across the mouth of retaining body 21 of the overflow port to facilitate hydraulic testing” (Fritz, col. 3, ll. 10-14).
  6. Fritz does not explicitly mention a diaphragm or a waste water port. It thus does not teach sealing a thin diaphragm over the waste water port to permit a leak test and then opening the diaphragm to thereafter permit the flow of fluid through the waste water port as required by claim 1. It also does not teach sealing a thin diaphragm over the outer end of the upper end portion of a one-piece overflow fitting as required by claim 10.
  7. Francisco teaches a removable drain strainer with a sieve receptacle and bristle extension for use in a bathtub or shower drain system (Francisco, col. 1, ll. 5-10). It includes a drain system 102 having a threaded portion 48 and lock washer 52 (Francisco, Figure 2).

8. Neither Lewis nor Oropallo teach sealing a thin diaphragm over the outer end of the upper end portion of a one-piece overflow fitting as required by claim 10.

#### PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of ordinary skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). *See also KSR*, 127 S.Ct. at 1734, 82 USPQ2d at 1391 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 1739, 82 USPQ2d at 1395, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*,



11 How. 248.” *KSR*, 127 S.Ct. at 1739, 82 USPQ2d at 1395 (citing *Graham*, 383 U.S. at 12, 148 USPQ at 464 (emphasis added)), and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at 1740, 82 USPQ2d at 1396. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

The Supreme Court stated that there are “[t]hree cases decided after *Graham* [that] illustrate the application of this doctrine.” *Id.* at 1739, 82 USPQ2d at 1395. “In *United States v. Adams*, ... [t]he Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *Id.* at 1739-40, 82 USPQ2d at 1395. “*Sakraida and Anderson’s-Black Rock* are illustrative – a court must ask whether the

improvement is more that the predictable use of prior art elements according to their established function.” *Id.* at 1740, 82 USPQ2d at 1395.

The Supreme Court stated that “[f]ollowing these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement.” *Id.* The Court explained, “[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740-41, 82 USPQ2d at 1396. The Court noted that “[t]o facilitate review, this analysis should be made explicit.” *Id.* (citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). However, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*

In rejecting claims under 35 U.S.C. § 103(a), the examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). *See also In re Piasecki*, 745

F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *Id.* at 1445, 24 USPQ2d at 1444. *See also Piasecki*, 745 F.2d at 1472, 223 USPQ at 788. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444; *Piasecki*, 745 F.2d at 1472, 223 USPQ at 788.

## ANALYSIS

### **A. Rejection of claim 1 under 35 U.S.C. § 103(a) as unpatentable over Ball in view of Fritz.**

The Examiner found that Ball teaches all of the limitations of claim 1 except the waste water port including a test plug that is a cut open diaphragm (Answer 4). He relies on Fritz for the missing limitation, finding that it teaches a test plug including a diaphragm (Answer 4). The Examiner found that “in consideration of Fritz, it would have been obvious to one of ordinary skill in the drain system testing art to associate a diaphragm with the [Ball] test plug in order to enable quick and easy removal.” (Answer 5). The Appellant argues that “even if one was motivated to combine the Ball and Fritz references the plug 15 would be within the drain and not over the waste water port as the claim requires.” (Br. 8).

Ball discloses a diaphragm comprised of flexible rubber or the like that is imposed over the overflow port for leak testing and, after the testing is complete, cut with a knife or other sharp object after water is purged from the system without disassembling any of the structure. Ball teaches that the diaphragm eliminates any

need to remove any sealing component from the overflow port after testing and facilitates the testing procedure (Finding of Fact 3). Fritz teaches the use of a relatively thin, continuous test plug to seal an overflow port during leak testing (Finding of Fact 5).

The only disclosure in either reference regarding plugging a drain port in connection with a leak test is the teaching of Ball that “[i]n the conventional testing procedure, the [drain] port 28 is plugged in any conventional manner” (Finding of Fact 3). We find that the teaching of Ball to use a flexible rubber diaphragm to seal the overflow port and to seal the drain port in any conventional means in preparation for leak testing would have at least suggested to one of skill in the art at the time the invention was made to modify Ball to use a thin diaphragm to seal the drain port for leak testing in a similar manner to that disclosed for the overflow port (Finding of Fact 4). Appellant has not shown that the Examiner erred in rejecting claim 1 as obvious over Ball in view of Fritz.

**B. Rejection of claims 5 and 6 under 35 U.S.C. § 103(a) as unpatentable over Ball in view of Fritz and further in view of Francisco.**

The Examiner found that:

Although the drain system of the [Ball] bathtub does not include a threaded portion and lock washer, as claimed, attention is directed to the Francisco reference which discloses an analogous bathtub which further includes a drain system 102 having a threaded portion 48 and lock washer 52. Therefore, in consideration of Francisco, it

would have been obvious to one of ordinary skill in the bathtub art to associate a threaded portion and lock washer with the [Ball] drain system in order to facilitate securement.

(Answer 5). Appellant asserts that there is no motivation to combine Francisco with Ball or Fritz (Br. 9). Appellant does not contest that the combination of Ball, Fritz, and Francisco discloses all of the limitations of claims 5 and 6. To the extent the Appellant argues in his pre-KSR Brief that there is no explicit teaching, suggestion, or motivation to combine Francisco with Ball and Fritz, that argument is foreclosed by *KSR*. *KSR*, 127 S.Ct. at 1740-41, 82 USPQ2d at 1396.

One of ordinary skill in the art would have been able to modify the combination of Ball and Fritz to include the threaded portion and lock washer of Francisco using methods known in the art at the time the invention was made. Moreover, each of the elements of Ball, Fritz, and Francisco combined by the Examiner performs the same function when combined as it does in the prior art. Such a combination would have yielded predictable results. *See Sakraida*, 425 U.S. at 282, 189 USPQ at 453.

Claim 5 thus is a combination which only unites old elements with no change in their respective functions and which yields predictable results. Therefore, the claimed subject matter likely would have been obvious under *KSR*. In addition, neither Appellant's Specification nor Appellant's arguments present any evidence that modification of Ball suggested by the Examiner is uniquely challenging or difficult for one of ordinary skill in the art. Moreover, the threaded portion and lock washer of Francisco are a technique that has been used to improve

one device (the bathtub of Francisco), and one of ordinary skill in the art would recognize that it would improve similar devices in the same manner.

Because Appellant has not shown that the application of the Francisco threaded portion and lock washer to the combination of Ball and Fritz would have been beyond the skill of one of ordinary skill in the art, we find using the technique would have been obvious. Under those circumstances, the Examiner did not err in finding that it would have been obvious to one of ordinary skill in the bathtub art to associate a threaded portion and lock washer with the Ball drain system in order to facilitate securement (Answer 5). Because this is a case where the improvement is no more than the predictable use of prior art elements according to their established functions, no further analysis was required by the Examiner. *KSR*, 127 S.Ct. at 1740, 82 USPQ2d at 1396. Claim 6 was not argued separately, and falls with claim 5. See 37 C.F.R. § 41.37(c)(1)(vii). See also *In re Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991).

**C. Rejection of claim 10 under 35 U.S.C. § 103(a) as unpatentable over Lewis, Fritz, and Oropallo.**

The Examiner found that Lewis teaches all of the limitations of claim 10, except for the overflow fitting including a diaphragm and cap. He relies on Fritz to provide a diaphragm, and found that it would have been obvious to one of skill in the art to associate a diaphragm with the Lewis overflow fitting in order to facilitate testing. The Examiner turns to Oropallo for a teaching of a cap on the overflow fitting, and found it would have been obvious to one of ordinary skill in

the drain system art to associate a cap with the Lewis overflow fitting in order to conceal same. (Answer 6).

The Appellant argues that Fritz does not teach sealing a thin diaphragm to the outer end of the upper end portion of an overflow fitting as required by claim 10, instead arguing that Fritz teaches a plug 15 that is within a retaining body 12 (Br. 10). We agree with Appellant that Fritz teaches one embodiment in which a plug 15 is within a retaining body 12. In the only other disclosed embodiment, Fritz teaches a removable test plug 76 that is a separate component from the overflow fitting (Finding of Fact 5). In both embodiments, the test plug, which is not explicitly described as a thin diaphragm as claimed, is not sealed to the outer end of the upper end portion of a one-piece overflow fitting as required by claim 10 (Finding of Fact 6). Even combining Fritz with Lewis, there still is no teaching to seal a thin diaphragm to the outer end of the upper end portion of a one-piece overflow fitting as required by claim 10, because Lewis does not teach the use of a diaphragm, and Fritz does not explicitly teach a thin diaphragm and, to the extent the test plug could be considered a thin diaphragm, it is not sealed in the manner required by claim 10. The Examiner has provided no reference showing the missing limitations (Findings of Fact 6 and 8), nor has he made a prima facie case of obviousness over Lewis, Fritz, and Oropallo with respect to claim 10.

#### REMAND

We remand this application to the Examiner for consideration of whether the combination of Ball with Lewis, Fritz, and Oropallo renders obvious the subject matter of claim 10. As discussed in connection with the rejection of claim 1, Ball

teaches a diaphragm comprised of flexible rubber or the like that is imposed over the overflow port for leak testing and, after the testing is complete, cut with a knife or other sharp object after water is purged from the system without disassembling any of the structure (Finding of Fact 3).

As such, we remand this application to the Examiner to consider whether it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the bathtub drain adapter of Lewis to seal a thin diaphragm to the outer end of the upper end portion of a one-piece overflow fitting as taught by Ball.

### CONCLUSIONS

We conclude that Appellant has not shown that the Examiner erred in rejecting claims 1, 5, and 6 under 35 U.S.C. § 103(a). We conclude that Appellant has shown that the Examiner erred in rejecting claim 10 under 35 U.S.C. § 103(a).

### DECISION

The decision of the Examiner to reject claims 1, 5, and 6 under 35 U.S.C. § 103(a) is affirmed. The decision of the Examiner to reject claim 10 under 35 U.S.C. § 103(a) is reversed. The application is remanded to the Examiner pursuant to 37 C.F.R. § 41.50(a)(1) (2006) for further consideration of the prior art.



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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

In addition to affirming the examiner's rejection of one or more claims, this decision contains a remand. 37 CFR § 41.50(e) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)) provides that

[w]henver a decision of the Board includes a remand, that decision shall not be considered final for judicial review. When appropriate, upon conclusion of proceedings on remand before the examiner, the Board may enter an order otherwise making its decision final for judicial review.

Regarding any affirmed rejection, 37 CFR § 41.52(a)(1) provides "[a]ppellant may file a single request for rehearing within two months from the date of the original decision of the Board."

The effective date of the affirmance is deferred until conclusion of the proceedings before the examiner unless, as a mere incident to the limited proceedings, the affirmed rejection is overcome. If the proceedings before the examiner do not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejections, including any timely request for rehearing thereof.

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AFFIRMED-IN-PART AND REMANDED

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